

# MAN K I N D

## OFFICIAL JOURNAL OF THE ANTHROPOLOGICAL SOCIETIES OF AUSTRALIA

Vol. 3, No. 10.

February, 1947

### ORIGINAL ARTICLES :

#### New Zealand : Ethnology.

Duff.

**The Evolution of Native Culture in New Zealand: Moa Hunters, Morioris, Maoris.<sup>1</sup>**  
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To the ethnographer, whose factual task is to record the mutual likenesses and differences which primitive cultures exhibit and whose intellectual task is to examine the reasons for the retention of the likenesses and the development of the differences, the vast island world of Polynesia is a peculiarly favourable laboratory. The size of the archipelago, the comparative scarcity of its island groups and the frequently vast distances separating them are all factors which favoured the development in virtual isolation of the various sub-cultures once they were hived off from the parent stock. Perhaps the strongest reason however is the virtual certainty that all of these islands were uninhabited when the ancestral Polynesians moved out into the eastern Pacific some 1,500 years ago<sup>2</sup> and the equally strong probability, except perhaps in New Zealand, that the only non-Polynesian stock to arrive there since have been ourselves. It follows then that the likenesses and differences to be observed in the various Polynesian cultures, in the time of Cook, were due to internal developments within Polynesia itself.

It is probable that the first settlement took place within that slender zone, reaching west to east from 175 to 150 degrees west longitude and confined between the parallels of 10 and 20 degrees south latitude, within which there exists the greatest cluster of Polynesian groups. At opposite ends of this zone, the Samoan and Society groups soon began to serve as dispersal Hawaikiis from which the smaller Western Polynesian and the much vaster Eastern Polynesian areas were settled by radial migrations, extending in the last case, as far north as Hawaii, as far south as New Zealand and as far east as Easter Island.

We may regard some disturbance at the centre as a prerequisite for these outward movements which we may liken to the dropping of a great stone in the centre of a pond. The impulse for the first billowing out of energy from these centres was doubtless the arrival of the Polynesians in their new island world, i.e. Buck's Early Polynesians, 5th to 11th century A.D. The first explorations were so thorough that the major groups in each area were all settled at that time, New Zealand's discovery by tradition dating back at least 1,000 years. Buck

<sup>1</sup> This paper was read before Section F, Australian and New Zealand Association for the Advancement of Science, Adelaide, 1946.

<sup>2</sup> I follow Buck (1944) in accepting Percy Smith's estimate of the 5th century A.D. as a working date for discussing the movement of Polynesians into their present archipelago.

believed these early Polynesians to have entered by the Micronesian route, losing, in the process, the pig, the dog, the fowl, the taro, and other food plants. The impetus, some six or seven centuries later, for the second great rippling out from the Eastern Hawaiki was, in his opinion, the introduction of these animals and plants to the Society Islands from the west and the importation of the sweet potato from the western coast of South America. The movement culminated in New Zealand with the arrival in the mid-fourteenth century of the canoes of the *Fleet*. The number of immigrants were small but, doubtless from their *mana* as introducers of the taro and kumara, they exercised an influence out of all proportion to their numbers and, like the Normans in England, rapidly founded a new hierarchy of tribes and tribal power. Contact with tropical Polynesia virtually ceased after this migration or "descent," as the Maoris appropriately call it, and the next five centuries, up to the arrival of the Europeans, represented a period of local culture development, culminating in the culture and people we have come to know as Maoris. In other Polynesian groups, particularly marginal groups, the same stages of development may be postulated, i.e. (a) discovery, first settlement and development in isolation over a period of more than 500 years, (b) a brief period of sudden subsequent "invasion" from the Hawaiki, and (c) a period of local development of not less than 300 years.

Turning now to the end processes of this separation, as noted by European travellers and students of the 18th and 19th centuries, an outstanding result was the great number of cultural differences which had developed. Many likenesses had been retained, but these and the differences were exhibited in such an apparently random pattern that it was difficult to find a starting point from which to work back. Assuming that Ra'iatea or Tahiti was the Hawaiki of the Eastern area, the culture of the Hawaiian outpost was seen to have little in common with its presumed ancestor, Easter Island no more, New Zealand even less. Furthermore, the respects in which these or any sub-culture agree or disagree with the central culture are likely to be different. The general reason for this divergence of culture is clear enough. No culture can stand still but must perpetually renew itself by transmission. Variation is inherent in the transmission and the chances of the variations coinciding are most unlikely. One general tendency can, however, be noted, i.e. the tendency for this spontaneous change to proceed at a faster tempo in central areas than in marginal areas, so that we have, in theory, a greater chance of isolating the Tahitian culture of 1,000 years ago by a study of the culture of its marginal outposts than by a study of recent Tahitian culture. As a general principle this is well established but, since its formulation by Gregory (1922), it has received no more striking confirmation than in the uncovering of the earlier New Zealand culture stratum.

In theory then, the prototype Eastern culture is best retained on the farthest margins of the great circle of its migration ripples. But the problem has been, in dealing with any of the derived cultures, the lack of any ready means of distinguishing earlier from later culture elements. In New Zealand for instance, simple tangless rounded adzes characterize the more populous North Island whilst more elaborate tanged adzes are known mainly from the South Island and the Chathams. On first principles, the former might be regarded as the earlier, the latter a later and more complex elaboration of the ancestral type. In the production of these tools, on the other hand, the reverse applies. The scarce and poor survivals of local wood carving in the South Island and the Chathams suggest an obvious degeneration from a powerful ancestral tradition best represented in the North Island. In the tropical margins

the difficulty is even greater. Are the "script" and stone sculpture of Easter Island to be regarded as a recent local development or as the survival of a formerly more advanced Polynesian "civilization"?

Much depends on being able to distinguish the earlier from the later culture stratum in any marginal group, and the importance of New Zealand is that this has been, to some extent, possible in this group.

For one reason, New Zealand was a large enough land area for the earlier cultures to be able to retreat before the later and survive in isolated areas, long after the period at which, in a smaller tropical group, they would have been overwhelmed. The most isolated area of such survivals was the Chatham Islands, some 400 miles off the east coast of the South Island. There was also the South Island itself with a climate generally unsuitable for the crop-growing economy of the later migration. A third area, apparently, was the northern extremity of the North Island from Coromandel to North Cape. Of these areas, the latter would be the first to be completely overwhelmed. The earlier South Island culture probably ceased independent existence in the sixteenth century and the Chatham Islanders were only overtaken by Maori culture with the ship-borne invasion of 1835. Without traditional or archaeological evidence on the origin of these cultures it would be justifiable, from their marginal position, to regard them as earlier. For the South Island and the Chathams this was done by Skinner (1921), who distinguished a Northern Culture differing from the Polynesian norm and a Southern Culture (South Island and Chathams) displaying strong affinities with the culture of Eastern Polynesia. In addition, the traditions of the Morioris of the Chathams indicate A.D. 1250-1300 as the last contact with New Zealand.

However, the greatest advantage the New Zealand scene possessed was the presence in human middens of bones of extinct birds, notably the moa (*dinornithidae*), the swan (*chenopsis*) and the eagle (*harpagornis*). For the period at which these birds became extinct, we have to rely on Maori traditions which have little to say on the eagle (*hokioi*) and nothing on the swan, except the wrongly applied term *pouakai*. Traditions, like statistics, may be interpreted in different ways but my interpretation of the numerous recorded traditions of the moa is that they revolve around a few incidents of pre-Fleet times, and have been transmitted secondhand by the descendants of the Fleet migration. It is possible, I think, that moas were extinct in the North Island before the Fleet arrival but in the South Island they may have survived until approximately A.D. 1500. Traditions in either place fail to confirm a later survival.

If this inference of the age of the moa is correct, it follows that archaeologists may regard deposits marked by the presence of moa bones as the oldest human sites in New Zealand.

#### MOA-HUNTERS.

These Moa-hunter "camps," as I propose to call them, have been found principally on the east coast of the South Island, frequently at river mouths or estuaries, always in positions unsuitable for agriculture. In the case of the northernmost Wairau site, this is important, as the climate would allow kumara to be grown. The "camps" are not fortified or capable of fortification and at the Wairau "camp" the dead were buried openly, close to the house sites: a practice so much at variance with the secretive Maori customs based on fear of desecration, that one suspects that the Moa-hunters lived at peace. In addition, no weapons have been found, stone clubs being the only ones likely to survive. Among the large collections of

bones found in the middens, human bones are completely absent. Bones of the Polynesian dog have been found suggesting that this animal at least survived the Early Polynesian migrations through Micronesia.

First seriously investigated in 1870, these South Island "camps" yielded few spectacular or unusual artifacts until the discovery in 1939 of a large "camp" at the mouth of the Wairau river in Marlborough. This was largely due to the fortunate discovery of burials which gave a picture of a culture quite distinct from recent Maori culture, although clearly ancestral to it. The comparison is of course confined to those imperishable items of material culture in which comparison is possible, namely ground adzes, chisels, gouges, fish-hooks, needles, awls, harpoon points, personal ornaments, etc., and to burial customs.

The initial discovery made by J. R. Eyles, the site being on his step-father's farm, established that certain disputed reel-shaped objects, most commonly of stone, belonged to the Moa-hunter culture and were simply beads (Andersen, 1940). Further discoveries by Eyles in March 1942 brought the Canterbury Museum into the field and a preliminary account of the first seven burials has been published by the Museum (Duff, 1942). Joint excavations, continued during 1943, 1944 and 1945, added 22 burials and enough material to warrant the publication of a larger and more comprehensive memoir (Duff, 1946).

In every respect, the material found demonstrated a Polynesian migration with strongest affinities to the marginal islands of Eastern Polynesia. The dispersal Hawaiki was, on the evidence of adze comparison, clearly shown to be the Society Islands. The adzes comprised specialized types long known within New Zealand from the South Island, the Chathams, and less distinctively the North Island. Of greatest diagnostic value was the large quadrangular-sectioned type, with pronounced lashing grip, strongly marked longitudinal curvature of the blade and, in rare cases, the provision of two lashing knobs on the grip. Virtually unknown in the major area of the North Island the type is matched beyond New Zealand in the following groups of Eastern Polynesia: Hawaii, Marquesas, Pitcairn, Rapa, Mangaia, Pukapuka, Nassau and Rakahanga and beyond the Eastern zone in an obviously intrusive line reaching into Western Polynesia from the atolls of the Northern Cooks through the Tokelau atolls to Uvea.<sup>3</sup> By the ethnographic method alone, the only centre from which this specialized and distinctive adze type could achieve such a dispersal is seen to be the Society group. Other types found exhibit a generally similar distribution pattern. Most interesting for tropical Polynesian research is the scarcity, among recent collections of Society adzes, of the tanged quadrangular type of the early dispersal period. The standard tanged triangular type of the Society and Cook Islands thus appears to be a later development and diffusion.

In spite of possessing *in toto* the adze types matched severally by all the groups marginal to the Eastern Hawaiki, the moa-hunter culture actually remained more conservative than its parent in not elaborating any new forms, which is the more remarkable because of the great range of new rock types in New Zealand, in many of which the prototype forms were difficult if not impossible of execution. By contrast, Maori adze culture reveals an adaptation to the new environment, crystallizing around a new, tangless, rounded, quadrangular form appropriate to coarse-grained rocks such as greywacke and diorite.

Tangless adzes were unknown, except in a class of small forms where the grip could not be shaped. Among over 200 adzes recovered, there was none corresponding to the Maori tangless type.

<sup>3</sup> See Figure 1.

Another striking illustration of the general failure of the moa-hunter culture to adapt itself to the new conditions, is given by one of the fish-hook types. This comprised a lure in which the minnow shape of the pearl-shell bonito *pa* of the tropics was carefully rendered in local stone, notably serpentine. The lure must have been difficult to shape in stone and must have been much less effective than the pearl-shell prototype in which the fish were attracted not by the minnow shape but by the colour and material. These however were probably perpetuated until the end of the culture period. Much more effective and simpler to make was the Maori adaptation of a simple wooden shank, faced with the iridescent

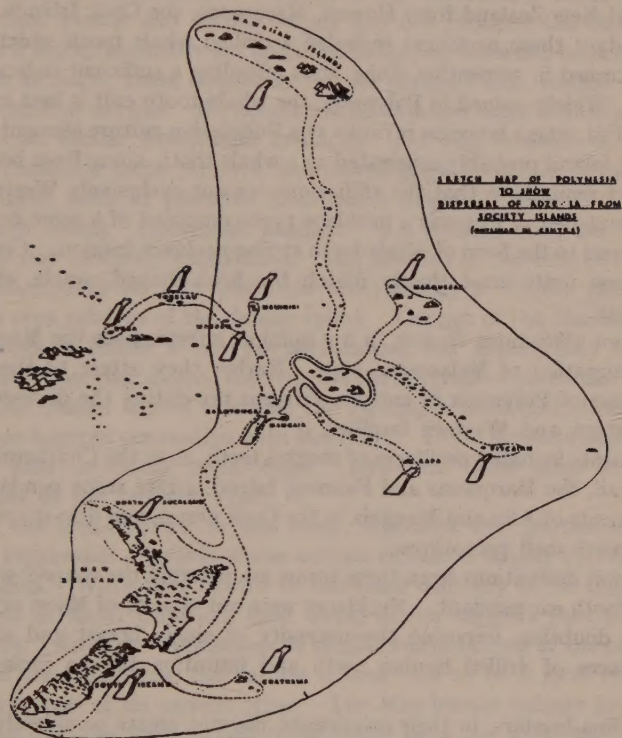


Figure 1.

shell of the *Haliotis*. As in the tropics, the moa-hunter lure was fitted with an unbarbed point, the shape of which is intermediate or between the recent Western and Eastern points and probably ancestral to both.

Bait hooks are little different from the Maori forms, the exception being the absence of the large bone points attached by the Maoris to large wooden hooks for taking groper and shark. The one-piece moa-hunter hooks include the barbless, sub-circular form, best rendered in the stone examples of the Chathams, Pitcairn and Easter Island; a typically marginal affiliation. Significantly, human bone was not used for hooks or other bone implements, moa bones and cetacean teeth being favoured.

The harpoon, which New Zealand shares only with the Chathams and the Marquesas, is revealed as of Moa-hunter origin. The similarity in form is so close as to suggest a common origin, and only the Eastern Hawaiki could have served as the dispersal centre.

The Moa-hunter ornament forms differ so sharply from the Maori that it is difficult to trace any connection. One form has been already referred to: necklaces of beads cut from cetacean teeth, moa, dog, and human limb-bones. First known from rare stone copies, which were also made in Moa-hunter times, the purpose of these was quite unknown to the Maoris until their discovery as units of necklaces in the Wairau graves. Comparable forms are known beyond New Zealand from Hawaii, Marquesas, the Cook Islands, Tonga and Fiji. As a central pendant these necklaces included a drilled whale tooth which was, in several cases, carefully copied in serpentine stone, thus affording a sufficient indication of the value placed on them. Widely valued in Polynesia, the whale-tooth cult is best represented in the recent culture of Fiji, where however it ranks as a Polynesian culture element. The crescentic *rei miro* of Easter Island probably originated as a whale tooth, slung from both ends, as in the Fijian *tambua* and reminds us that the affiliations are not exclusively Western.

Again best matched in Fiji was a necklace type composed of a score or more of units of bone or ivory shaped to the form of whale-teeth strung necklace fashion. Certain exaggerated variations on these units most closely match the hook-shaped, single whale-ivory breast pendant of Hawaii.

These Western affiliations do not, in my opinion, substantiate the Maori tradition of an early Western migration of Melanesian type. Rather they attest to the survival, in the most remote corner of Polynesia of culture patterns pre-dating the divergence of the Polynesians into Eastern and Western families.

Other ornaments included necklaces of sharks' teeth, as in the Chathams, drilled porpoise teeth, as in Hawaii, the Marquesas and Fanning Island, a rare stone pendant reminiscent of the phallic ornaments of Atiu and Mangaia in the Cook group, and disc-shaped stone pectorals reminiscent of pearl shell prototypes.

The only Maori derivations from these forms are possibly the shaped whale tooth (*aurei*) and the shark's tooth ear pendant. Necklaces were not typical of Maori ornament form, the cult of nephrite doubtless imposing the necessity of single breast and ear pendants, but occasional necklaces of drilled human teeth and imitation human incisors appear to be Maori.

Again, the Moa-hunters, in their ornaments, did not create completely new patterns or ideas. They built on tropical prototypes doubtless widespread at the time of their departure for New Zealand, and still to be matched over a wide tropical range. The discovery of nephrite enabled the Maoris to develop completely new, ornament forms, the *hei tiki*, *hei matau*, *pekapeka*, and ear pendants representing patterns for which there is no tropical prototype.

Slighter artifacts include barbed bone bird-spear heads, needles, awls, and tattooing chisels. The cloak-pin (Maori *aurei*) is not yet so established, while the decorative bone comb may be categorically denied as of Moa-hunter origin.

Moa-hunter burial customs differed from those of the Maori in most respects. Firstly, the burial of men of rank within the habitation area contrasts sharply with the later practice of carrying off secretly the exhumed bones to conceal in a cave or mountain. Only males were buried with apparent care, being laid out full length with feet to the north-west, head to

the south-east and provided with burial offerings. A recurring practice was the post-burial removal of the head, with or without the mandible. The special treatment of the head as here is an ancient and generalized Oceanic custom. In tropical Polynesia, it is paralleled in Easter Island and the Marquesas. It was practised by the Maoris, who for preference embalmed the head, and by the Morioris, who subsequently removed the skulls from corpses trussed and buried in a sitting position with head exposed. A frequent practice was the inclusion in the burial offerings of a moa's egg, pierced at one end only.

While no example of Moa-hunter woodwork has survived, I think it is a justifiable conclusion that their plastic and decorative art had not attained the elaboration of Maori times. For even if Maori decorative art had to be judged by bone fish-hooks, bird spear points and slighter bone artifacts, these frequently feature carved heads, incised spirals, and other sophisticated decorative devices. No decorative elaboration more sophisticated than simple notching appears on similar Moa-hunter artifacts. The best evidence comprises two relief fish on a Banks Peninsula stone pectoral, and paired single spirals as in the Chathams, on a Shag River pectoral, both of probable Moa-hunter origin. The only recognizable figure worked on a South Island "Chevroned pendant" is a stylized bird, but the association of these pendants is not definitely established. The absence of the human figure and double spiral are significant, and we may postulate provisionally a simpler plastic art featuring fish, birds, and a poor relative of the double spiral. The age of the charcoal and ochre rock drawings of the South Island is not yet established, but superficially they betray little resemblance to Maori carving motifs, and suggest the survival of an earlier and less powerful art-tradition. The human figures resemble the grotesque bark caricatures of the Morioris but share the three-fingered convention with Maori art. Other subjects include insects, birds, including moas, fish, cetaceans, seals, dogs, "bird-men" and other mythical creatures including monsters of the *taniwha* type.

To sum up, the Moa-hunters, in this essay, represent that portion of New Zealand's original Eastern Polynesian migrants whose culture remained largely static, and reminiscent of its tropical origins. While they cannot be identified with any of the migrations from this quarter mentioned in Maori tradition, their conservatism suggests that they were a single homogeneous wave. From the appearance of similar culture items at the northern tip of the North Island and the Chathams, the culture is seen, not to be a local collateral of Maori culture but the survival of its earliest stage. The Moa-hunter culture probably flourished in the South Island until the Fleet arrival in the North, *circa* A.D. 1350, and I propose to allow another 150 years for its gradual absorption into the stream that produced Maori culture, so that A.D. 1500 might be regarded as its effective finish in the Wairau area. Its absorption rate would be progressively slower from north to south, and in the Southland of the early European period much Moa-hunter blood and random culture items still survived.

I use the term Moa-hunter to describe this culture in preference to *tangata whenua* (lit. natives) or pre-Fleet Maoris, as these terms are too general and apply indiscriminately to the alleged Melanesian Maruiwi, to the pre-Toi and post-Toi Polynesians. Finally we don't know that their culture was pre-Fleet in ancestry or in actual date. We do know that they lived when moas were plentiful in the country.

#### MORIORIS.

Assuming that the first settlers of New Zealand were Early Polynesians of the ninth or

tenth centuries, the Moa-hunter culture stratum, as defined above, may be regarded as the nearest we can push back, in point of time, to the earliest culture. The Moriori culture of the Chatham Islands represents a similarly close approximation to the parent culture type, as we may regard the Morioris as descendants of a section of the first Polynesian settlers of New Zealand, only slightly modified by a subsequent migration of A.D. 1250-1300. While we cannot date any Moriori culture item earlier than Broughton's discovery in 1791, the isolation of the Chathams and the high percentage of the population able to trace unbroken descent from the earliest settlers give good grounds for regarding much of Moriori culture as a time-stayed survival of the earliest New Zealand culture.

Because of the accretion of culture items from this later thirteenth century migration and the culture changes inevitable during the long centuries of separation from New Zealand it is hardly correct to follow the man-in-the-street in calling the earliest inhabitants of New Zealand Morioris. This term, with its variations Mooriori and Maoriori, appears to be closely connected etymologically with the term Maori which, as a plural adjective, would properly be Maoriori, and is apparently of post-European application to distinguish its bearers from the former. The term Moriori as such does not occur in any New Zealand tradition, although in the somewhat suspect *Kauwae-raro* (Percy Smith, 1915) the Maori chronicler claims that the ancestral New Zealand name for these people was Mouriuri, the name Moriori, he adds, being incorrectly applied by the Maoris of the 1835 invasion (pp. 143, 155). The same account equates the ancestral Morioris with the Maruiwi, the alleged earliest migration to New Zealand from the west or south-west, of a people whom Best (1916) and Percy Smith (1915) eagerly accepted as Melanesians.

The questionable Maruiwi migration will be dealt with later, but in the meantime it is sufficient to say that if the Morioris were, as the "*Kauwae-raro*" states, an offshoot of the Maruiwi, it has been demonstrated conclusively by Skinner (1923) that the Maruiwi must have been a Polynesian, more particularly an Eastern Polynesian people.

A most specious and circumstantial Maori account of the 1250 migration to the Chatham Islands is given in the "*Kauwae-raro*" (chapter 7). It is sufficient to state that this account was not published until long after the Maori invasion of 1835 and some 19 years after Shand's first-hand record of the Moriori version had been published in the *Polynesian Society's Journal*.

Unlike the Moa-hunters we are here able to draw upon the traditions of the people concerned, and I follow the admirable account by Shand (1911).

The Moriori account of their origins agrees generally with what can be learned about the arrival of man in New Zealand. Unlike the New Zealand scene where family trees of the pre-Fleet period were truncated or suppressed, the Moriori family trees for the corresponding period are grossly inflated, though agreeing closely over the final 30 odd generations. The first human ancestor to live on the Chathams was Rongomai-whenua (an allegorical name) who is impossibly dated 125 generations prior to 1868. His people were called Hiti, and as every memory of their migration from abroad had been lost, they were regarded as autochthones. For the New Zealand comparison we can regard Rongomai as a contemporary of the discoverer of New Zealand, Kupe, and might regard him as arriving not later than the ninth or tenth century. The family tree above Rongomai, in the section on the "sons of Heaven", includes however the name of Toi, with Rauru as son, and Whatonga as grandson, precisely as in New Zealand. In New Zealand Toi is placed about 1150, which means that some section

of the Toi immigrants left New Zealand for the Chathams. Regarding these as Early Polynesian settlements, as in New Zealand, the land was completely populated by these early settlers on the arrival of the first of the Later Polynesians. The first of the second wave immigrants was Kahu, his migration the first sea arrival to be so recalled. Kahu brought some kumara from Aropawa, the old name for the north end of the South Island, but failing to establish it, returned in disgust to Aotea, the North Island, to Hawaiki. Although assigned to 98 generations prior to 1868, Kahu may confidently be regarded as fitting in between Toi and Manaia in the New Zealand time scale (not earlier than A.D. 1200). Now takes place a migration corresponding to the New Zealand Fleet and doubtless due to disturbances in New Zealand upon the arrival of the unofficial forerunners of the Fleet. Moriori leaders ascribe the migration to the troubles in Hawaiki, here New Zealand. Such an one was Manaia, formerly considered in New Zealand to be a Fleet contemporary, now believed (see Percy Smith, 1915) to have preceded it by about four generations. Certainly his name, and that of no other Fleet chieftain, is remembered in the traditions of these last arrivals in the Chathams. Because of this we may assign the arrival of these canoes, the Rangimata, Rangihoua, and Oropuke to A.D. 1250-1300. Like the Maoris, the Morioris preserve no record of arrivals subsequent to this "Fleet," and we may regard this as their last contact with New Zealand. At first belligerent, the newcomers did not succeed in overwhelming the numerous and peaceful local people and were shortly persuaded by a local chief to cease man-slaying for ever, an edict faithfully observed until the Maori invasion. Another reason denying the newcomers the predominant status they acquired over the local population in New Zealand was their inability to introduce food plants which would grow in the Chathams.

From this account it will be seen that the Morioris were blended of much the same elements as those which gave rise to the Maori population of New Zealand, with the major exception that in the Chathams the percentage and influence of migrants of the Later Polynesian waves were much slighter. The ancestors of the great mass of the population arrived in Early Polynesian times, while the handful of Fleet-period immigrants had arrived before the Fleet proper had arrived in New Zealand from Hawaiki.

In considering the relationships of Moriori material culture, an initial problem, in the absence of archæological work, is the need to regard all objects recovered from the earth as contemporary with the recent Morioris, whereas it is certain that changes must have taken place in the course of the long isolation of the islanders.

Some aspects of Moriori culture are strongly Maori, others specifically Moa-hunter. It is tempting but doubtless incorrect to regard the former as due to the later migration from New Zealand the latter to those the migration found in occupation. A more probable explanation is however the great element of chance in selection, and the unlikelihood that that section of the Early Polynesians who moved to the Chathams would take with them and retain exactly the same cultural preferences as those who moved down into the South Island.

A strongly Maori aspect of Moriori culture was its retention up to European times of weapons of the Maori types. Both varieties of the Maori hand club type are common in collections, some symmetrical like the *patu* proper, others bill-hook curved like the *wahaika*. Simple spears corresponding to the Maori *tao*, and a quarter-staff (*tupurari*) with one thrusting point and one striking end as in the Maori *taiaha*, were closely matched. A unique echo of a largely forgotten Eastern weapon type was the dagger, only matched in Hawaii.

In adze types, the lack of stratification involves a certain confusion. Large numbers of Moriori adzes agree strikingly with the Moa-hunter types of New Zealand, all except one class being matched, but there is an important group without tang and with rounded quadrangular section, agreeing precisely with the standard Maori type which is unknown from Moa-hunter sites.

While no comparison can be made with the Moa-hunters, Moriori clothing exhibits a generalized Maori relationship in the use of the rain-cape, attached with ivory cloak-pin as in New Zealand, although from the literature it is probable that the Moriori capes were plaited and not "finger-tied." Unlike the Maoris, the Morioris concealed the genitals with the *maro* or loin-clout. In the only one of these preserved the plaiting, in fine flax strips, is finer than any Maori plaiting recorded. In its length and fringed ends, the *maro* agrees with those of the atolls of the Northern Cooks (Duff, 1942B). Like the Moa-hunters the Morioris did not wear ear pendants or the decorative bone comb; unlike both, they did not tattoo.

The major specifically Maori affiliations are included above. Relationships with the Moa-hunter culture are numerous, with items often precisely matched.

In adzes for instance, as mentioned above, the Chathams have produced characteristic examples of the tanged, quadrangular type with lashing lugs or knobs. None of this type has so far been recorded from the North Island of New Zealand. Rounded carving gouges are shared in identical form.

In smaller bone artifacts—needles, awls, bird-spear points—the Moriori specimens are from their simplicity of form and lack of decoration closer to the Moa-hunter than to the Maori equivalents.

In the absence of the bone barb of composite bait hooks, in the simple unbarbed one-piece bait hooks, stronger relationships are again with the Moa-hunter culture. The absence of the minnow lure is shared with Maori culture. The harpoon is shared with the Moa-hunter culture. There is no information whether the harpoon survived into recent Maori culture, except possibly in the South Island.

The strongest and most distinctive resemblances are in ornaments. The Morioris shared only with the Moa-hunters, the use of drilled porpoise teeth in necklaces, a similar use of shark's teeth with squared off sides, necklace units of the "reel" and conventionalized cetacean-tooth type, necklaces of drilled oyster and fan shells. The significance of these affiliations is heightened by some remarkable tie-ups with Easter Island culture.

Most striking is the resemblance between the treatment of the human figure, in the only Moriori wood sculpture known, and the Easter Island ancestral figures.

Rare sub-circular stone fish-hooks are matched only in Pitcairn and Easter Island, although one example is recorded from the north end of the South Island.

The Moriori tanged flint blades for cutting blubber conform to a technique best matched in the obsidian spear heads of Easter Island and occasionally matched in the South Island.

Moriori clubs feature a raised design recognizable in Easter Island, on dancing paddles, as a degenerated human face.

In addition, Moriori culture had developed local peculiarities, such as the sea-going "raft-canoes" of bundled flower stalks of flax (*Phormium*), bracken fern, and kelp floats. The common explanation that the small size of the trees on the Chathams caused this is not the whole story. In many parts of Polynesia, plank built canoes were devised from smaller timber. Probably during their sojourn in New Zealand the ancestral Morioris had lost the

art of plank building canoes, from the ease with which large hulls could be dug out of New Zealand's giant trees. That the raft canoe was elaborated on an ancestral pattern is demonstrated from the use in New Zealand, particularly the South Island, of similar but temporary craft (*mokihi*) for river transport.

Burial customs are various and suggest diverse origins. Similar to the Moa-hunter practice was the burial of the dead close to dwellings. Except that the face was turned to the west, the trussed upright burial agreed with the Maori custom. On decomposition the heads were often removed to tapu repositories. Wooden coffins (*hakana*) for the exhumed bones or skulls of chiefs reflect a Maori practice. Apparently local were the customs of binding dead fowlers upright against trees, and sending dead fishermen out to sea on rafts.

Moriator decorative art, as far as we can judge from its scanty relics, is poor and degenerate compared with Maori art. No decorative device more complicated than notching or cross-hatching appears on small bone artifacts. Paired, but not double, spirals appear on the only house carvings known; birds, possibly the albatross, are the only other motif on these and the rare raft-canoe fittings. Birds or possibly seals and occasional human grotesques appear on limestone shelters. Human figure carvings in the round, of pumice (one of wood) were doubtless of religious or magical significance. The unexplained human simplifications incised on tree trunks, agree most closely with the rock shelter drawings of the South Island.

The exact form of the Moriator dialect is under dispute by its two recorders, Baucke (1928) and Shand (1911). Baucke claims not improbably that the numerous Moriator texts recorded by Shand were greatly modified by familiarity with the dialect of the Maori overlords. Examination of examples from each confirms the strong general agreement with Maori, particularly in vocabulary, and in spite of Williams' (1919) claim that the Moriator dialect had as much claim as Rarotongan to be considered a separate Polynesian dialect, I doubt whether the student of Maori would find Rarotongan texts easier to read than Moriator. A surprising tendency of the Moriator dialect is the indication of the beginning of degenerative changes. Moriatoris commonly clipped final vowels; varied standard vowels to a considerable extent; introduced a "ch" sound before certain vowels preceded by "t" (Tchuku for Tuku, e.g.); used "h" for Maori "wh" (Henu(a) for Whenua); "k" for Maori "ng" (Tchakat(a) for Tangata). The Moriator causative prefix "hoko" replaced the Maori "whaka," closely approximating the Hawaiian "ho'o."

In the use of "h" for "wh" and "k" for "ng" the Moriator agrees with the Ngai-tahu dialect of the South Island, where in turn it is probably the survival of the dialect of the Moa-hunter times. In language categories the Moriator and South Island dialects are seen to have moved further from the presumed original New Zealand dialect than standard Maori which ranks as the purest, and least altered of the Eastern Polynesian languages.

As might be expected from its early origin and long isolation in a rather inhibiting environment, Moriator culture differs from Maori culture more frequently than it resembles it. Generally, Moriator culture differs by retaining a greater number of ancestral Eastern Polynesian culture forms, but in language and decorative art the reverse applies, the Maori forms being closer to the presumed prototypes. Moriator affiliations are on the whole closest with Moa-hunter New Zealand, but in the items it shares with Easter Island is even more strongly marginal than the former.

R. S. DUFF.

(To be continued.)

**Australia : Material Culture.****Cooper.****Incised Stones of South Australia.** By H. M. Cooper, Honorary Ethnologist, South Australian Museum.

## INTRODUCTION.

Small elongate stones incised with certain markings have been discovered from time to time upon scattered native camp sites in South Australia and as the number available for examination now amounts to 77 it is thought that a brief descriptive paper may prove of interest and at the same time encourage further investigation, thus tending to enlarge our knowledge of their use, distribution and age. Lack of information precludes this paper from being more than a preliminary one and it is therefore mainly in the nature of a tentative classification and description of the stones and their designs.

Due to the faintness of the markings in many cases and the presence of quantities of untreated stones of similar size and shape on many camp sites, it is not surprising that the existence of incised stones appears to have been generally overlooked. A systematic search will prove whether their occurrence is widespread or merely local.

As many of the stones to be mentioned were collected in the vicinity of Martin's Well Station a short description of the country may be of interest. The region comprises plains, stony ridges and low hills, clothed with mulga (*Acacia aneura*), black oak (*Casuarina lepidophloia*), saltbush (*Atriplex* sp.) and other vegetation characteristic of semi-arid localities. It is mainly drained by Wilpena Creek and a network of small tributaries, its waters in times of flood reaching Lake Frome. The Northern Flinders Ranges, a few miles to the westward (highest point St. Mary's Peak, 3,900 feet) constitute the chief watershed. Most of the stones were discovered upon camp sites alongside water holes existing in these creeks, material of the requisite shape and size being readily available in their usually dry beds and upon adjoining ridges. The average annual rainfall is about seven inches but decreases to five or less during times of drought. Extensive camp sites, strewn with stone hearths and implements ranging from microliths to the larger sizes such as pebble choppers and "horsehoof" types exist.<sup>1</sup> Polished stone axe heads also occur and an interesting series of rock carvings is situated in a small watercourse a few miles from Martin's Well homestead. It is therefore evident that a considerable native population existed in this area. The Jadlaura tribe which used to inhabit the district is now extinct.

An accompanying map<sup>2</sup> shows the permanent waters, gum creeks and other physical features of the country with which are associated the incised stones described below.

## DESCRIPTION.

The stones, whose smooth water-worn faces are admirably suitable for incising, were obtained, as previously mentioned, from material abundantly available in neighbouring creeks and upon their banks.

Apart from a few cylindrical specimens, similar in form to wooden "message sticks," and an occasional one with angular sides,<sup>3</sup> all the incised stones are flat with an average

<sup>1</sup> See H. M. Cooper, "Large Stone Implements from South Australia," *Records of S. Aust. Museum*, VII, pp. 343-369.

<sup>2</sup> See Plate AC, figure 2.

<sup>3</sup> See Plate AC, figures 21 and 22.

INCISED STONES OF SOUTH AUSTRALIA.

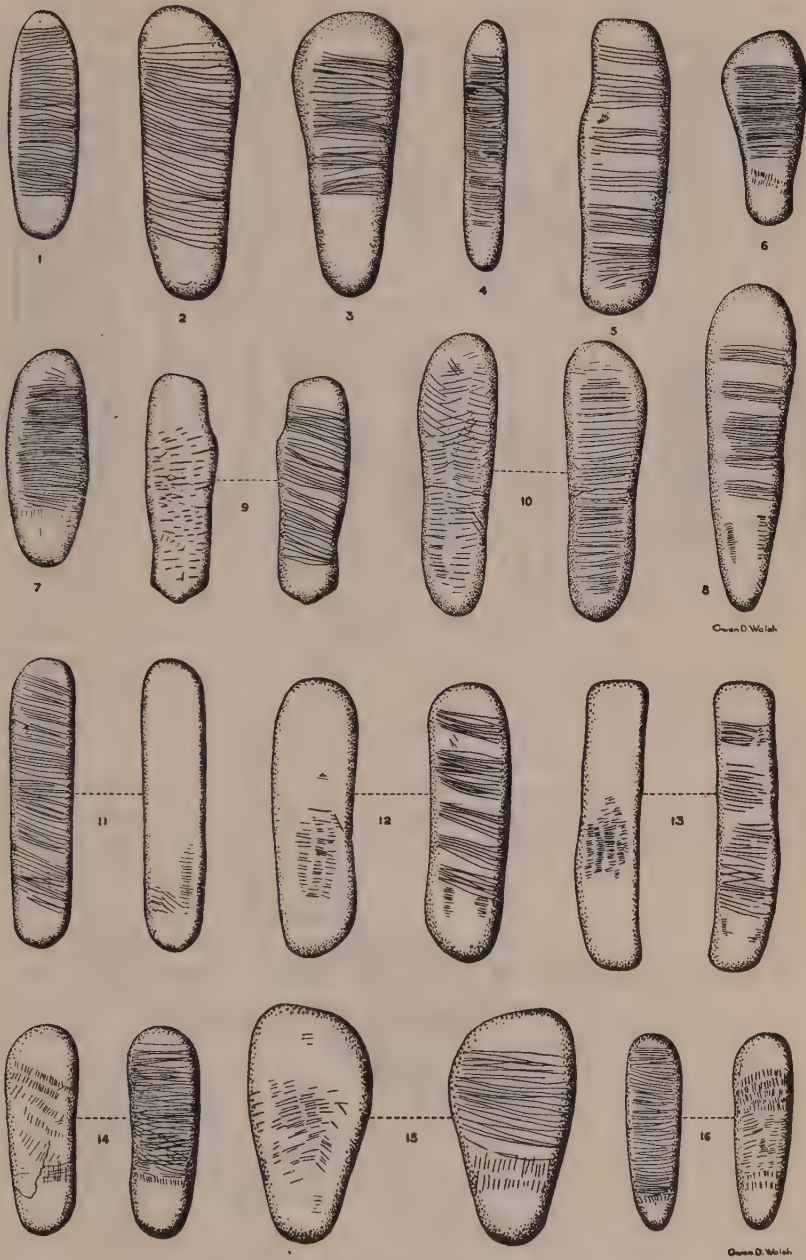


Plate AB.

INCISED STONES OF SOUTH AUSTRALIA.

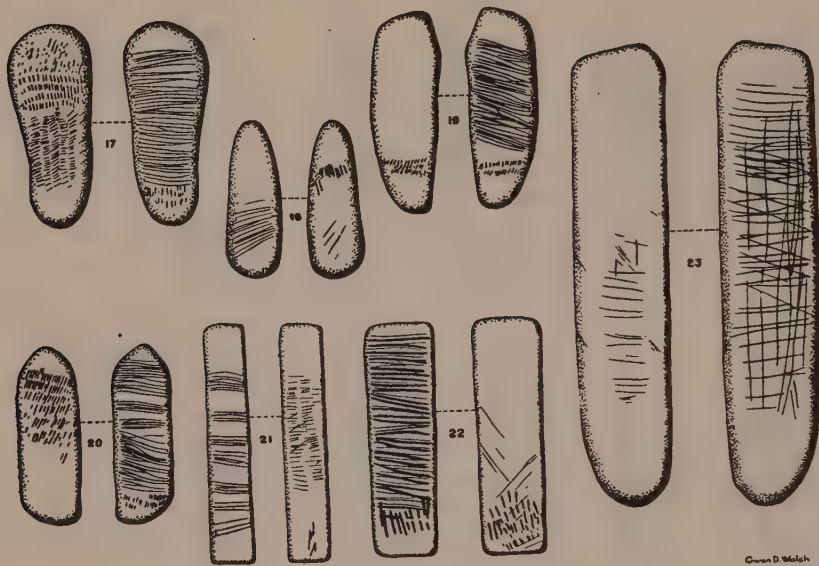


Plate AC, Figure 1.

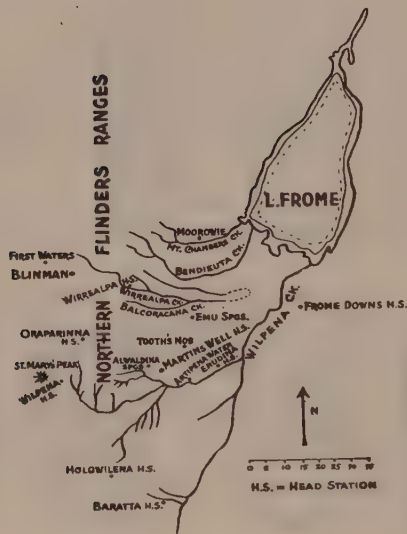


Plate AC, Figure 2.

thickness of five-eighths of an inch. Some are roughly rectangular in shape but many are much narrower or even pointed at one end.<sup>4</sup> This latter form occurs so frequently that selection must have been deliberate and its possible significance is discussed later.

With the exception of two examples, where the markings are deeply cut, the incised patterns are more in the nature of moderately well defined surface scratches, for the production of which stone flakes of suitable material or marsupial incisor teeth would have been very suitable. Generally, the patterns are composed of three different forms of incisions, (a) long transverse lines, more or less parallel, sometimes in spaced groups, and (b) and (c) very short longitudinal or transverse markings. The usual designs are (a) long transverse lines alone, and (b) long transverse lines combined with one or more groups of short longitudinal or short transverse lines. Some stones also carry incisions upon the reverse side, in addition, these reverse markings being invariably *short* and either longitudinal or transverse or both. All specimens examined bore the characteristic *long* transverse lines upon one face but no case occurred where these had been incised on *both* sides of the same stone. Similarly, *short* lines never occurred alone on both sides.

The stones are mainly derived from a comparatively soft material and consequently broken specimens are, unfortunately, relatively common. They are, with one or two exceptions, light in colour, mostly browns and greens, and were possibly selected in order that the incisions might be more clearly discernible. Sir Douglas Mawson, Honorary Mineralogist at the South Australian Museum, has kindly examined the incised stones and reports that all are represented by rocks in the Wirrealpa-Martin's Well country and that they range from fine grained siltstones to silty clay shales. Rocks of this nature in the vicinity are of late Pre-Cambrian to Lower Cambrian in age.

Examination of the various specimens revealed occasional incisions which by reason of their relative freshness must be considered to have been added at a later date.

An interesting feature of the discovery of fifteen incised stones upon the banks of Wilpena Creek was that several sets of two were found lying close together.

The following list refers to the drawings accompanying this paper; localities and weights being given. The mileage of sites outside Martin's Well Station is also given, such mileage being the approximate distance in each case from the homestead on that station.

- Fig. 1. Alwaldina Springs, 2 ozs.  
2. Salt Creek, 4 ozs.  
3. Wilpena Creek, 4½ ozs.  
4. First Waters, Moolooloo, 45 miles N.W. Cylindrical type, 1¾ ozs.  
5. Alwaldina Springs, 5 ozs.  
6. Salt Creek, 2 ozs.  
7. Tooth's Nob, 2½ ozs.  
8. Wilpena Creek, 5 ozs.  
9. North Martin's Well, 2 ozs.  
10. Kanyaka Creek, 65 miles S.W., 3 ozs.  
11. Wilpena Creek, 3 ozs.  
12. Salt Creek, 4 ozs.  
13. Salt Creek, 2½ ozs.

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<sup>4</sup> See Plate AB, figures 3, 8, 16 and 18.

14. Tooth's Nob, 2 ozs.
15. Wilpena Creek, 4 ozs.
16. Nantabba Springs, 1 oz.
17. Nantabba Springs, 2 ozs.
18. North Martin's Well,  $\frac{1}{2}$  oz. Length  $2\frac{5}{8}$  inches. Smallest stone noted.
19. Alwaldina Springs, 2 ozs.
20. Alwaldina Springs, 2 ozs.
21. Black Oak Hill, 2 ozs. Sharply angular sides.
22. Old Wirrealpa, 2 ozs. Sharply angular sides. 30 miles N.
23. Matthewson's Springs,  $6\frac{1}{2}$  ozs. Heaviest stone observed. 4 miles S.W.

The stone shown in Fig. 22 from Old Wirrealpa is most unusual in that both faces carry two distinct patterns, one being lightly incised and the other deeply cut. It is uncertain whether both are of the same age.

Additional material, not shown, was obtained from the following localities :

Emu Springs, Wirrealpa, 18 miles N.E.

Wirrealpa Head Station, 27 miles N.

Baratta Head Station, 38 miles S.

Holowilena Head Station, 35 miles S.W.

Moorowie Well, Wirrealpa Station, 40 miles N.E.

Artipena Water, Martin's Well.

Coffin's Springs, Martin's Well.

The following data refers to the 77 incised stones examined :

Length : Average, 4 ins. Maximum,  $5\frac{1}{2}$  ins. Minimum,  $2\frac{1}{2}$  ins.

Breadth : Average,  $1\frac{3}{8}$  ins. Maximum,  $2\frac{1}{4}$  ins. Minimum,  $\frac{5}{8}$  in.

Thickness : Average,  $\frac{7}{8}$  in. Maximum, 1 in. Minimum,  $\frac{1}{4}$  in.

Weight : Average,  $2\frac{3}{8}$  ozs. Maximum,  $6\frac{1}{2}$  ozs. Minimum,  $\frac{1}{2}$  oz.

All stones exhibited their natural shapes, none having been dressed by hand.

#### USES.

The significance of much ethnological material formerly used by the Aborigines, more especially that attributed to earlier cultures, is now difficult to define and it would appear that incised stones belong in this category.

An examination of the material figured in this paper and which is representative of the 77 stones so far collected demonstrates that the markings, with an occasional exception, closely follow one of several well-defined patterns. It seems certain therefore that they were intended to convey or record some predetermined and specific meaning. Several possible uses, all purely tentative, may be briefly discussed.

Of the three specimens in the possession of the South Australian Museum, one is labelled "Message stone sent from one tribe to another with an accompanying verbal message, Northern Flinders Range," but upon what authority is not stated.

At this juncture, for purposes of comparison, brief mention may be made of the wooden "message sticks" used by certain Australian tribes. Roth's conclusion,<sup>5</sup> based upon personal experience, was that the actual markings incised upon such sticks did not convey in

<sup>5</sup> See W. E. Roth, "N. Queensland Ethnography Bulletin," No. 8, p. 9.

themselves any intimation of the message to be delivered (which was a verbal one), the stick being merely confirmation of the messenger's bona fides or in the nature of a passport. Hamlyn-Harris<sup>6</sup> arrives at somewhat similar conclusions and Howitt<sup>7</sup>, who gives a detailed description of wooden "message" sticks, describes their uses in the same manner. None of these three writers however refers to material derived from stone.

It is perhaps significant that the stones are often similar in size and shape to "message sticks," flat and cylindrical examples being common to both. The proportion of flat specimens however is very much higher, a contributory cause being that cylindrical shaped stones are more difficult to obtain than those flat in shape.

Wooden "message sticks" and the stones referred to are both of such size as to be convenient for carrying in the hand of the messenger or upon his person, but convenience alone in carrying or handling does not necessarily prove their use as "message stones." Furthermore, the formal nature of the patterns is very different from the often elaborate designs on many "message sticks." There is a possibility that some at least may have been used as "message stones."

That they may have had some ceremonial or sacred meaning cannot be overlooked. It has been pointed out that the deliberate choice of a number of stones similar in shape, that is with one end relatively wide and the other narrower or even pointed, is significant. In all cases where stones of that shape carry a combination of long and short incisions, the *shorter invariably* appear at the narrow or pointed end. Their shape also is somewhat suggestive of phallic type.

The short longitudinal markings are rather similar to those cut on many large cylindro-conical stones. An excellent example of the latter, discovered on Martin's Well Station, carries many such markings.

The use then of some of the material under review (for all may not have been intended for the same purpose) as phallic or ceremonial stones must be considered.

#### AGE.

Here again lack of corroborative evidence makes it difficult at present to assign any definite age to the stones under discussion. They may have been contemporaneous with present-day native culture or part of a culture now extinct, or both. It should be noted however that the rusty reddish glaze or surface film so often characteristic of arid and semi-arid regions which has already covered the chipped-out designs of many rock carvings in this part of South Australia has also formed over the incised lines on some of the stones. Experienced observers in Europe and elsewhere however, have proved that reliance on glazing or patination alone as a proof of age cannot necessarily be relied upon, local climatic conditions, soil content and composition of the stone itself being contributory factors.

Markings upon some of the incised stones are often faint, in some cases almost indecipherable, but it is difficult to attribute this definitely to age or weathering, the latter including the abrasive effect of sandstorms which are a feature of the area.

"Horsehoof" and other large stone implements, often crude in manufacture, partly buried and showing evidence of heavy patination and glazing also occur in these localities.

<sup>6</sup> See R. Hamlyn Harris, "On Messages and Message Sticks," *Memoirs Queensland Mus.*, VI, pp. 13-15.

<sup>7</sup> See A. W. Howitt, "Native Tribes of S.E. Australia," London, 1904.

Whilst all the worldly possessions of the Aborigines used during the entire European occupation seem to have been lavishly described by explorers, scientists and other writers, there appears to be no record respecting incised stones and in consequence it is possible that their use ceased at an earlier date.

It is probable that some of the incised stones may be of considerable historical age.

#### ACKNOWLEDGEMENT.

It is desired to express appreciation of the valued assistance afforded by the following : Messrs. H. Ross and P. O'Connell, Manager and Bookkeeper respectively of Martin's Well Station ; Mr. C. Edwards, Manager of Wirrealpa Station ; Miss Gwen Walsh, South Australian Museum Artist for the excellent series of drawings and their arrangement ; and Mr. A. Hay, South Australian Museum Artisan, for the map of Lake Frome and adjoining regions.

H. M. COOPER.

#### Australia : Material Culture.

Mitchell.

**Patination** By S. R. Mitchell, M.A.I.M.M., A.A.C.I., Trustee of The National Museum, Melbourne.

Patination is the term applied to the change that takes place on the surface of flint and other highly siliceous rock materials. Dense, resistant flint artefacts of Palæolithic age that have been buried for many thousands of years or have been exposed to atmospheric weathering are frequently highly patinated ; on the other hand, flint artefacts that have been buried or exposed for a relatively short period are as much or even more affected.

It is considered that flint is made up of crystalline and colloidal silica, the colloidal silica filling in the interstices, between the particles of crystalline silica. The effects of prolonged contact with certain solutions in nature is to dissolve some of the colloidal silica leaving innumerable minute interstitial cavities on the surface of the flint. It is this altered crust that gives rise to the white or grey coating on weathered flint. When this alteration is in the initial stages, the thin film of white on the black flint shows as a bluish tinge.

The chief factors determining patination appear to be time, temperature, concentration of the patinating agents, the initial condition of the stone and the environment in which the object has been buried.

The drying effect of the heat of the sun, with the concentration of the patinating agents on flints exposed on the surface, affords specially favourable conditions for rapid patination. Alternations of temperature cause minute fracturing, renders the surface layer more porous and susceptible to the effects of the attacking solutions. When these solutions contain other salts, the chemical effects may be accentuated.

The flint associated with the Tertiary limestones of south-western Victoria and south-eastern South Australia is very susceptible to patination—a change that may be termed advance surface desilification. Many flakes of this material found on the coastal dunes often show patination on the surface exposed to the air while the opposed surface resting on the dune has retained its original dark colour.

Because of the extreme surface alteration shown on many aboriginal artefacts, some consider them to be of great antiquity. To discover whether the degree of patination may or may not be an indication of antiquity, the writer desires to draw attention to the following facts.

Alkaline carbonates are solvents of silica and exist in many natural waters, particularly those circulating in limestones or the dune limestone of the areas mentioned. In order to ascertain the amount of this alteration, the writer selected for examination a well-formed flint scraper found on an aboriginal camp site close to Cape Bridgewater, Victoria. The cross-section, when it was broken, showed about 55 per cent. of altered cortex that had been changed from a dark grey flint to a white substance surrounding a less altered core. Under the microscope in thin sections, the cortex proved to be silica, showing innumerable minute cavities formed by the removal of portion of the silica in solution. The specific gravity of the core and cortex was not determined but that of the former was obviously higher than that of the latter. The cortex was separated from the core and both were subjected to partial chemical analyses :

	Core	Cortex
	Per cent.	Per cent.
Silica ( $\text{SiO}_2$ ) .. .. .	98.32	97.50
Alumina ( $\text{Al}_2\text{O}_3$ ) and iron oxide ( $\text{Fe}_2\text{O}_3$ ) ..	1.50	2.10
Lime ( $\text{CaO}$ ) .. .. .	Nil	0.11
	<hr/> 99.82	<hr/> 99.71

The ratio of silica to alumina and iron oxide is 98.32 per cent. to 1.50 per cent. The increase of alumina and iron oxide in the weathered cortex is 0.6 per cent., therefore

$$\frac{0.6 \times 98.32}{1.50} = 39.3 \text{ per cent.}$$

which is the amount of silica removed from the weathered cortex by chemical agencies.

Dr. A. B. Edwards<sup>1</sup> has carried out some investigations on the weathering of flints and flint artefacts for the Council for Scientific and Industrial Research and his comments on this test are as follows :

"The alumina (and ferric oxide) in the flint is present chiefly as residual clay from the original limestone in which the flints formed. The lime in the marginal zone is present as carbonate, since the weathered flints show very slight, but persistent, effervescence of carbon dioxide when immersed in hydrochloric acid.

"The difference between the two analyses arises from the leaching of silica from the weathered portion of the flint, with a corresponding rise in the amount of residual clay. On this assumption we can arrive at the amount of silica leached from the weathered flint."

That this assumption is reasonable is confirmed by analyses of fresh and decomposed granite quoted by Twenhofel<sup>2</sup> which show a loss in the process of 30.28 per cent. silica ; no loss of alumina and only 0.11 per cent. of iron oxide.

The presence of calcium carbonate in the weathered flints, and its apparent complete absence from the unweathered flint, shows that the flints have been subjected to the action of carbonate waters, and suggests that such water has been responsible for the leaching out of silica from the surface of the flints.

<sup>1</sup> Edwards, Dr. A. B., *On the Weathering of Flints and Flint Artefacts*, C.S.I.R. Report.

<sup>2</sup> Twenhofel, W. H., *Treatise on Sedimentation*, p. 12, 1932.

The solubility of finely crushed flint in slightly alkaline fluids has been established by experiments carried out in connection with silicosis. Whitehouse<sup>3</sup> gives some figures for the solution of flint in dilute alkaline and acid solutions at 37° C. It is shown that as much as 4 per cent. of the finely powdered flint was dissolved by a 1 per cent. solution of sodium carbonate in 48 hours.<sup>4</sup> This indicates that, under suitable geological conditions, such as are found in areas where travertine is being formed, or in the vicinity of calcareous dunes or dune limestones, the weathering of flints may be a relatively rapid process. Thus, the degree of weathering of a flint artefact will depend as much upon the environment in which it has lain as on its age, and cannot be regarded as a reliable measure of its antiquity.

Flint artefacts showing this high degree of alteration are plentiful on the Kongorong Hills in the south-eastern parts of South Australia. They are large scraper types ranging from 3 cm. to 12 cm. in their largest dimension, made from flint that occurs locally in masses of irregular shape and large nodules that have weathered out of the Miocene limestones, in which the flint was formed.

These artefacts are usually found on the hard surfaces of the wind-blown "drifts" from which a covering of sand has been removed; sites of old aboriginal camping places. The greater proportion of them show more or less alteration in the form of a buff coloured crust, which often extends into the centre. The original colour of the flint was blue or grey and the yellow colour of the crust is due to the presence of hydrous iron oxide. The surface of these artefacts often has a pronounced glossy lustre.

Flint artefacts showing this surface change occur also near Cape Bridgewater. They are usually much smaller in size than those of the Kongorong Hills and have a grey surface which is quite rough. On storing, they develop an efflorescence on the surface due to the crystallizing out of sodium chloride which has been absorbed from the sea spray or surface waters, this efflorescence being an indication of the porous nature of the altered crust. It is of interest that old camps on the surface of the indurated dune rock close to the Bridgewater Lakes have yielded numbers of microlithic implements made from similar flint showing the same degree of alteration.

Another stone material that exhibits chemical change is the quartzite of Cretaceous age found on the eastern side of Lake Eyre. It is generally a fine-grained rock, usually buff in colour, and outcrops in some of the dry watercourses and on the low rises. For use by Stone Age man it is an ideal material. It lends itself to controlled flaking and yields symmetrical sharp-edged flakes and blades, from which the natives made a variety of tools of great beauty. Among these are well formed geometric microliths, pressure-flaked pirri, end-scrapers and prepared adze stones.

Many of these artefacts show similar surface alteration to the flints. Ward and Howchin<sup>5</sup> state that in some of the arid parts of Australia the upward movement of water is carrying to the surface soluble silica, accounting for the formation of quartzite and porcellanite.

They also state "Mr. L. K. Ward (1916) has lately observed thin veins of hydrous silica of equally recent origin at the Stuart Range Opal Field of South Australia."

<sup>3</sup> Whitehouse, A. G. R., The Solubility of Silica and Silicate Dust in Acid and Alkaline Solutions at 37° C., *Journal Indust. Hygiene*, Vol. 19, No. 10, 1937.

<sup>4</sup> Whitehouse, A. G. R., The Solubility of Siliceous Dusts and the Inhibitory Action of Added Dusts, *op. cit.*, Vol. 20, No. 9, 1938.

<sup>5</sup> David, T. W. E., and Howchin, W., *Report of Australasian Assocn. for Adv. Science*, pp. 77-78, 1923.

It is therefore reasonable to assume that the reverse process of desilification is still active and is a comparatively rapid one under favourable conditions.

Some of these artefacts in the possession of the writer show, when broken, at least 50 per cent. of the stone converted to a dull white product.

They are usually found on the margins of the clay pans where they have been subjected to alternating wet and dry conditions, and water that contained solvent salts; others were found on the surface of the dunes, under conditions which make it difficult to account for this surface alteration.

Artefacts made from quartzites derived from the Cretaceous rocks of the Darling River Basin and the north-western part of New South Wales also show in some cases this tendency to surface decomposition.

Although quartzite in general contains a high percentage of silica, it would appear that the secondary silica forming the bond which cemented the original grains of quartz sand is of a more soluble character, and it is this component that solutions attack.

An analysis of quartzite from Mulka, South Australia, showed:

						Per cent.
Loss on ignition	..	..	..	..	..	Nil
Silica	..	..	..	..	..	97.02
Alumina	..	..	..	..	..	1.60
Iron oxide	..	..	..	..	..	0.80
Lime	..	..	..	..	..	Nil
Magnesia	..	..	..	..	..	Nil
						<hr/> 99.42 <hr/>

The grey or bluish-grey chert of the Newcastle, Port Stephens and Port Macquarie districts of New South Wales is another material favoured by the natives for their stone tools, which shows a tendency to readily patinate or decompose. It outcrops in the cliffs at Merewether and elsewhere. According to Sir T. W. E. David it is of Permian age and made up of finely divided particles of divitrified rhyolite tuff, which later was converted into a hard chert. In this case the hard chert changes into a soft white material observed particularly on some of the artefacts found on the coastal camps, often so pronounced that they are completely changed into a soft chalk-like substance.

Analysis of a sample of chert from Merewether showed 87.00 per cent. of silica, leaving a balance of 13.00 per cent. of other constituents. This rock should therefore be very susceptible to chemical attack.

The surface decomposition of rock that has been shaped to form a stone implement is also of frequent occurrence, especially in the case of some basic igneous rocks like basalt dolerite and diabase. These rocks have a high percentage of ferric and alkaline minerals which decompose much more rapidly than those containing small proportions of these minerals.

Ground edge axes, and particularly the grooved forms made of basalt, so common in the Western District of Victoria, are very susceptible to surface decomposition, especially if

buried in wet volcanic soil, or soils containing organic acids. To illustrate the rapidity of chemical attack, some grave stones on the Nut at Circular Head, Tasmania, show an appreciable skin of decomposition on the dressed crinanite from which they were made. It is reported that the stone, when it was quarried about 100 years ago, was fresh and hard when obtained from the quarry.

Because of extreme surface alteration shown on these aboriginal artefacts, the high antiquity ascribed to them cannot be upheld, when the problem is studied from a geochemical standpoint. Such changes, in the opinion of the writer, can take place under favourable conditions in a comparatively short period of time, possibly measured in hundreds of years and certainly not in hundreds of thousands of years.

S. R. MITCHELL.

## PROCEEDINGS OF SOCIETIES

### NEW SOUTH WALES.

**Annual Report of the Anthropological Society of New South Wales, 1946.** *Summary of the report delivered at the annual meeting of the Society, 4th December, 1946.*

The Council has pleasure in submitting to members the eighteenth annual report covering activities for the year ended 30th September, 1946.

Total membership increased during the year to 114 and now consists of one life member, seven honorary members, one hundred and five active members and two members on the honorary fighting forces list. Council was pleased to welcome the return of six members from active service.

The following new members were elected: Hon. E. G. Wright, M.L.C., Parliament House, Sydney; Miss M. Pearce, Canungra, Queensland; Mr. A. A. Lipman, Grafton; Mr. E. Mercer, Terrey Hills; and Mr. F. G. Hanson, Wahroonga.

The death of two old and valued members, Mr. John Powell and Mr. F. Bender, was noted with regret. One member resigned.

Following are details of the general meetings held during the year:

1945—

November 1, Annual General Meeting.—“Hunting the Elusive Language,” Presidential Address by Dr. A. Capell.

1946—

May 19.—An excursion to West Head, Kuring-gai Chase, to view several recently recorded Aboriginal rock engravings.

July 3.—A Film night at Shell House. A series of films on the Eastern Arctic Eskimo and Canadian Indian lent to the Society by the Canadian National Film Board.

Four Council meetings were held.

Two numbers of the Society's journal *MANKIND* were published—Vol. III, No. 8, in March, and Vol. III, No. 9, in July. Circulation figures show a steady increase over last year's and demands for back numbers from overseas institutions reflect the growing importance of *MANKIND* as a scientific journal in the field of anthropology. Two more complete sets were sold during the year, one to the Nordiska Museet, Stockholm, and one to the Canterbury College, Christchurch, N.Z.

During the latter end of the year Council made an unsuccessful application to the Minister

for Education for a grant-in-aid of publication of MANKIND. The application was rejected on the peculiar plea that examination of the finances of the Society did not reveal any reason why its journal was in need of a subsidy. Council intends to renew its application for a grant-in-aid during the coming year.

The recently amended Constitution and By-laws of the Society were printed in booklet form and distributed to members in July. They were kindly donated by Mr. N. Warren Waterhouse.

With a view to encouraging interest in Anthropology by the pupils and staff of our secondary schools, a bibliography of works relating to the science of man was compiled by a special sub-committee of Council and forwarded to the Great Public Schools and High Schools of the State.

A special committee comprising the executive members of Council and other co-opted members, with Mr. F. D. McCarthy of the Australian Museum as secretary, was formed with the object of systematically recording all the known examples of Aboriginal art in the Sydney district. In the short period of its existence, the Committee has done some valuable work and recorded a large number of groups which are now being prepared for publication in MANKIND. It is regretted that funds are not available for the publication of the many charts now completed.

At the biennial meeting of the Australian and New Zealand Association for the Advancement of Science held in Adelaide in August, the Society was represented by the Hon. Treasurer, Mr. F. D. McCarthy. A resolution regarding the amendment of the Customs regulations covering the export of anthropological material, inaugurated by this Society, was supported by the Council of the Congress.

During the recent controversy over the proposal to establish an experimental station in Central Australia for the testing of rocket projectiles, Council made a public protest in the columns of *The Sydney Morning Herald* on 30th September, 1946, against the proposal and in a resolution which was forwarded to the Council of the Australian Anthropological Association for transmission to the Prime Minister. The President of the Society also championed the cause of the Aboriginal inhabitants of the proposed testing ground in a special Forum of the Air debate over the national network.

In reviewing the year's work, Council is not unaware of the apparent poverty of its lecture programme. However, members can be assured that Council has given its continued and earnest consideration to the matter of providing suitable lectures during the year but has been forced to the conclusion that few members are prepared to support it in its efforts. It is now apparent that the main instrument through which the Society can achieve its objects is its journal, and it is pleased to report that this publication continues to grow in vigour as each year passes. Members are urged to draw the attention of all those who may be interested in the past and present life of the natives of this land and the Pacific area to our journal, and so strengthen the work of the Society in the coming year.

### SOUTH AUSTRALIA.

**Biennial Meeting of the Australian and New Zealand Association for the Advancement of Science (Section F), 1946.** *Summary of certain of the proceedings of the Section in Adelaide on the 22nd, 23rd and 26th August, 1946.*

(a) *Resolution by Section F carried and submitted to the Council of the Association.*

It is resolved that representations be made to the Minister for Trade and Customs in respect to those regulations now covering the export of prehistoric and aboriginal relics to alter the regulations so as to provide for the following matters: (1) That prehistoric objects and skeletal material from, and anthropological objects made by, the natives of Australia and of territories administered by Australia shall not be exported unless the exportation is by an officially recognized scientific institution or unless permission is granted by the Minister for Trade and Customs on the recommendation of such an institution. (2) That, before such export is made, any object or objects of this nature should be offered for sale to the accredited scientific institutions of Australia. (3) That any such material entered for export contrary to the above regulations be liable to forfeiture to the Commonwealth Government of Australia and that the exporter be liable to a fine not exceeding one hundred pounds (£100).

(b) *The Education of the Australian Aborigine. By A. G. Edquist.*

The early education of the Aborigine and the European child is largely experimental, consequently the methods to be employed should place emphasis on observation, developing the spirit of research and manual dexterity. The recreative arts such as drawing, painting, carving, singing, instrumental music, dancing, play-acting should occupy a prominent place in any syllabus of studies. To enable the Aborigine to take a place in the ever-expanding environment resulting from contact with white civilization, he should be trained to make himself, to a large degree, independent of charity by making saleable objects such as leather goods, useful articles in wood, cane and basket-making materials as well as in metal. Education should tend to make the Aborigine feel that he is not an object of charity receiving in rations some small recompense for being robbed of his landed inheritance and prevented from living his life subject to his ancestral laws. If we are to preserve this fast dwindling race, we must develop in the Aborigine the desire to live.

(c) *Brachycephaly. By Professor A. A. Abbie.*

The question of the increasing brachycephalization of man in general is considered from the aspects of Evolution, Race, Stature, Mechanical Factors, Heredity, and Environment, Sex and Age. All except the mechanical factor are shown to play a part in determining the form of the head, but the part played is limited and of significance only in so far as it forms part of a general evolutionary trend. In man this trend is towards a progressive increase in stature, and a progressive tendency to maintain the infantile headform at a cephalic index of about 81.5. This tendency is not of only limited anthropological interest, but has the widest biological application, finding parallels in other animal groups. These findings emphasize the fact that anthropology is merely one aspect of biology at large.

(d) *Anthropology in Australian Museums. By F. D. McCarthy.*

In this paper an outline is given of the research work yet to be carried out in the study of the material culture and prehistory of the natives of Australia and Melanesia. A summary is given of the limited extent of the collections of native curios in the museums of Australia, and it is pointed out that serious gaps exist in regard to specimens from the Melanesian

islands, particularly New Guinea and the Bismarck Archipelago. A plea is made for the extension of the ethnological exhibits in our museums to embrace all Pacific countries, particularly the Dutch East Indies, Philippine Islands and south-east Asia, and to include India, as a contribution to the understanding of these peoples. The need for the establishment of a National Museum of Anthropology at Canberra, particularly as a repository for material from Australia's external territories in the western Pacific, is stressed as part of a policy to acquire adequate collections for scientific and educational purposes from this region. The full co-operation of the administrations of these territories is proposed, together with the appointment of anthropologists to carry out a systematic ethnological survey of them.

(e) *Kinship in Australian Aboriginal Societies.* By H. K. Fry.

Australian Aboriginal societies present patterns of kinship which are the expression of disapproval of marriage with any woman except a cross-cousin who is not "too close up," and also, with few exceptions, unless a sister be given in marriage in exchange to the wife's brother. The pattern of kinship which has emerged when such principles have been observed consistently is that which represents marriages between cross-cousins who are second cousins in a society where every member is classified as a relative. This pattern is inherently asymmetrical and the kinships of patrilineal and matrilineal societies occupy complementary dispositions in the asymmetry of the pattern. Where such societies are contiguous and intermarry, difficulties in adjusting kinships arise.

A multiplicity of clans and women in highly populated regions can permit anomalous trends in marriage and kinship systems to appear, as exemplified by the Ungarinyin, Worora, and Murngin tribes. Exchange of sisters in marriage may not be demanded, and marriage with both the sister and daughter of another man can receive social approval. The kinship systems which are the result of such circumstances have to be very complex to express the normal aversion of Aboriginal societies to marriage with a woman who is a "close up" cross-cousin. Depopulation or migration of tribes to arid regions permitting only a sparse population must make the maintenance of such complex systems impracticable and lead to the appearance of apparently simpler but degenerated and bizarre kinship terminologies.

(f) *Canoes and Canoe Trees.* By Dr. E. Couper Black.

This paper deals, in the first part, with the canoes and rafts seen by the early Pacific navigators. The canoes and rafts of the Tasmanians consisting of rolled soft pliant bark enclosed in a net; the simple canoes of one piece of bark bent and pleated at the ends, found on the east coast of Australia and the stiff slightly bent red gum bark canoes of the river and lake Aborigines are the indigenous canoes of Australia. Along the north coast and down the east and west coasts a little, the influence of races of a higher culture to the north led to the making of inferior imitations of the sewn bark and dug-out canoe with outrigger. The second part deals with the distribution of suitable red gums on the lower part of the Murray River. For instance, there are no available trees around the lakes and for forty miles up the river, due to the red gum only flourishing when its roots are in fresh water. The flat, one-piece, stiff bark canoes of the river blacks are described, also the method of making them. There are numerous magnificent red gum trees still standing, which plainly show where a large slab of bark was removed. These are likely to remain for many hundreds of years as museum

exhibits in the field. Descriptive notes are given of them, and their disposition along the River Finniss and its tributaries up to the number of about 115.

(g) *The Evolution of Native New Zealand Culture.* By Roger Duff.

This paper, as delivered before the Association, appears as an "Original Article" in this issue of MANKIND.

(h) *The Recent Increase of White-Aboriginal Mixed Bloods in the U.S.A., Canada and N.Z.* By A. Grenfell Price.

Recent history indicates a considerable increase of white-aboriginal mixed bloods in the United States, Canada, New Zealand and Australia, and this increase is creating important racial, social and economic problems. We can seek in recent statistics the answer to three important questions: are the total aboriginal populations increasing? Are the pure bloods increasing? And are the mixed bloods increasing? Census data indicates a rapid increase of mixed bloods in all four areas and a recovery of the total aboriginal population in Canada, New Zealand and the United States. So rapid is the advance that the U.S. Department of Indian Affairs claims that the total Indian population is increasing at the rate of 1.2% per annum as against 0.7% for the general American population, while from 1926 to 1936 the Maoris advanced by 29.3% as against 10.93% in the case of the whites. Several factors account for the increase both of full and mixed bloods. First these people are enjoying protection from and in some cases increased resistance to smallpox, which was by far the most potent killer of the natives in the early days of the white invasions. Second, the whites have abandoned their former practices of seizing native lands and slaughtering the aborigines if they resisted. Thirdly, certain governments, particularly that of the U.S., are making genuine efforts to acculturate their Aborigines and mixed bloods on scientific lines and have checked the all too hasty detribalization policies pursued by government agents and missionaries. Fourthly, certain governments, again notably the U.S., are treating their wards more generously. On the eve of the world war, the United States had doubled its expenditure on its natives and was spending £23 per Indian per annum, while Canada was spending £10. In contrast to this the Australian States averaged only 74s. and the Australian Federal Government the disgraceful sum of 19s. A fifth cause of the recent mixed blood advance probably lies in hybrid vigour, which should be further investigated on the lines of American research in Hawaii. While the pure blood Hawaiians are dying out the mixed bloods are showing a great advance and improved resistance to white diseases.

The problems arising from the growth of mixed bloods in the English-speaking countries considered above deserve further examination. It seems probable that over most of these areas the white majority peoples will ultimately absorb the natives, although there may be some exceptions, for example in the south-west of the United States and in New Zealand. In the majority of regions, however, absorption lies far ahead, and, in the interests of both whites and natives, scientific policies, based on adequate research, are essential to guide and facilitate the processes of intermixture and acculturation.

## OBITUARY

## MR. C. C. TOWLE, B.A.

Clifton Cappie Towle died on 22nd March, 1946, after a short illness. His sudden death was a great shock and a sad loss to his friends and to many others who had known him well during his lifetime. A man of serious nature, he devoted many years of his life to a study of anthropology, geology, astronomy and botany as well as to literature and music. As a contributor to scientific journals he preferred quality to quantity, so that his output of scientific papers was not high.

Mr. Towle was born at Penrith, New South Wales, in 1891, and his schooldays were spent at Penrith and Wollongong. He studied music at Bathurst and for three years was honorary organist of All Saints' Cathedral in that city.

During his university days, while studying for his B.A. degree, he was a resident at Moore Theological College. He forewent an intended career in the Church, because he refused to sacrifice the scientific view of man's origin in order to accept that of the Bible. He became an accountant and served in the New South Wales Railways from the early 1920's until his death.

Mr. Towle's interest in anthropology was stimulated by Sir Edgeworth David's lectures on ancient man, at the University Geology School. He began to collect stone implements in 1922 and pursued this hobby so assiduously that he finally accumulated a magnificent collection of approximately fourteen thousand specimens of all types of implements from many sites in New South Wales. This collection was bequeathed to the Australian Museum. Needless to say, it includes many unique specimens and fills many gaps in the Museum's collection.

Mr. Towle was a firm believer in the hypothesis that the form of chipped stone implements is due to the material used, and his most important papers dealt with this subject. He gave the name Elouera to an important specialized blade implement in eastern New South Wales. During his life he made widespread field researches and also gathered data for a series of books on the history of far western New South Wales, and on the Aboriginal relics of the eastern portion of this State. He had compiled a preliminary manuscript on the Aborigines of the Great Western Road from Sydney to Bathurst, but his sudden passing ended this interesting programme of study and first-hand research.

An important achievement of the late Mr. Towle was his part in the formation of the Anthropological Society of New South Wales. He approached the late W. W. Thorpe, Ethnologist, Australian Museum, about the need for such a society, and the latter convened the foundation meeting on 16th October, 1928. Mr. Towle acted as honorary secretary-treasurer from 1928 to 1930, as a councillor in 1930, and as honorary secretary from 1937 to 1939. He resigned in 1939 owing to a difference of opinion about the objects and function of the Society.

The late Mr. Towle was kind and generous to his friends and stimulated the interest of many peoples in the Aboriginal relics of New South Wales. His views, weighed by knowledge and thought, were defined; his ideals were high and his life was well lived.

## BIBLIOGRAPHY.

*Certain Stone Implements of the Scraper Family Found along the Coast of N. S. Wales.* Eastwood Press, 1930.

- An Oval Arrangement of Stones, Endrick Mountain, N. S. Wales. *Oceania*, Vol. III, No. 1, 1932.  
 Aboriginal Drawings near Glenbrook, N. S. Wales. *Vict. Natur.*, Vol. L, 1933.  
 Stone Scrapers: An Enquiry Concerning a Certain Conventionalized Type Found along the Coast of N. S. Wales. *Journ. Proc. Royal Soc. N.S.W.*, XVIII, 1935.  
 Stone Arrangements and Other Relics of the Aboriginal Found in the Lower Macquarie River, and near Mt. Foster and Mt. Harris, N.S.W. *MANKIND*, Vol. II, 1939.  
 A Bibliography of Stone Arrangements Found in Australia. *MANKIND*, Vol. II, 1939.  
 Rock Carvings near Woodford, N. S. Wales. *MANKIND*, Vol. II, 1940.  
 An Arrangement of Stones and Some Rock Drawings near Nowra, N.S.W. *Vict. Natur.*, Vol. LVIII, 1942.  
 Bora Ground near Ruby Creek, N.S.W. *Vict. Natur.*, Vol. LIX, 1942.  
 A Bibliography of the Cyclons. *Mystery Stones of the Darling River Valley*, by R. L. Black, 1942, pp. 102-4.  
 Quarries Used by the Aborigines of the Paroo River, N. S. Wales. *Vict. Natur.*, Vol. LX, 1942.  
 Small Stone Slab showing Grooves made by the Aborigines. *Vict. Natur.*, Vol. LX, 1944.

F. D. MCCARTHY.

## REVIEWS :

**Aboriginal Men of High Degree.** By A. P. Elkin, M.A., Ph.D., Professor of Anthropology, University of Sydney. 148 pp. Australasian Publishing Co. Pty. Ltd., Sydney, 1946. Retail price, 10/-.

The subject of this book is the Aboriginal medicine man, his personality, his training and his powers. It is based on information which may be classified as "Top Secret," and represents a pioneering effort in a field of research which is of absorbing human interest. Although the author suggests that the lack of attention formerly paid to the subject was due to the "prevailing concept of the general inferiority of the Aborigines," the reviewer would hazard the opinion that the errors and omissions of the past are due, not so much to the spread of a false concept as, to the absence of investigators, such as the author, sufficiently skilled to uncover the arcana of Aboriginal life.

Professor Elkin devotes the first part of his book to a consideration of the social functions of the medicine man in Australia, of his personality, of the method by which he is "called" or selected and of the way in which he receives his power. An analysis of the rites connected with the "making" of a medicine man shows that they follow a mummification pattern and the author is convinced that the ritual was introduced into Australia by way of the Torres Straits Islands, where a type of mummification was once practised.

In the second part of the book, the author has provided an ethnological feast of rare dishes which should go far towards whetting the appetite of both specialist and non-specialist readers alike. The remarkable powers of the medicine man are described and analysed and compared in the clearest of terms and with a minimum of recourse to the special jargon of the investigator of psychical phenomena. The professor is at pains to emphasize the little realized fact that the animistic, magical and super-ordinary causes of illness and death are *not* abnormal causes to the Aborigine and therefore their treatment by men whom we would label as witches, clairvoyants, mediums and psychic experts is regarded as a perfectly normal procedure.

The psychological background of the belief in sorcery is outlined and a detailed explanation of the curative treatment applied by the native "doctor" is given. In like manner, the extraordinary powers of projecting thought through space, which some Aboriginal men of high degree possess along with their ability to see or ascertain by invisible means what is happening at a distance and to read the mind of another person are described and compared

with similar powers believed to be possessed by Tibetan yogi. Further examples of the rich psychic atmosphere in which the Aboriginal medicine man works are afforded by the practice of walking through fire, using a magical cord in much the same way as the rope in the Indian rope trick, fast travelling, mass hypnosis and silent meditation.

In conclusion, the author is convinced that Australian Aboriginal religion "with its emphasis on mysteries and degrees of initiation, its doctrines of pre-existence and reincarnation and its belief in psychic powers, belongs to the Orient, not to the West, and can only be understood in the light of the Orient."

Clarity of expression and economy of style along with a wealth of detailed evidence partly derived from other sources but mainly from the personal knowledge of the narrator, stamp this book as a distinguished contribution to Australian anthropology and to the study of primitive religion.

F. L. S. BELL.

**Man's Most Dangerous Myth: The Fallacy of Race.** By M. F. Ashley Montagu. Second Edition. Revised and enlarged. New York, 1945, VIII, 304 pp.

Instead of waiting till the end of this review to recommend Dr. Montagu's book to "the intelligent reader," the undersigned wishes to emphasize the immediate necessity of all who subscribe to the objects of the Australian Anthropological Association to get hold of this book somehow and to spread the wisdom of its argument as widely as possible. Along with Ruth Benedict's "Race; Science and Politics" and Huxley and Haddon's "We Europeans," it is the clearest exposition and most purely scientific explanation of the concept of "race" available to English readers.

"To-day, more than at any previous time in the history of man, it is urgently necessary to be clear as to what this term is and what it really means." To many people the term "represents a compound of physical, mental, personality and cultural traits which determines the behaviour of the individuals inheriting this alleged compound." "Such a conception of race has no basis in scientific fact or in any other kind of demonstrable fact. It is a pure myth."

It is possible to recognize four distinctive stocks or divisions of mankind. These are the Negroid or black, the Archaic white or Australoid, the Caucasoid or white, and the Mongoloid stocks or divisions of mankind. It is preferable to speak of these four large groups of mankind as *divisions* rather than as *races*, and to speak of the varieties of men which enter into the formation of these divisions as *ethnic groups*. The use of the term "division" emphasizes the fact that we are dealing with a major group of mankind sufficiently distinguishable in its *physical* characters from the three other major groups of mankind to be classified separately. Nothing more is implied in the term than that.

Dr. Montagu, having stated his position, proceeds to give the history of "this product of emotional reasoning" and to show how "racism" has become an important ideological weapon of imperialist politics. He then proceeds to debunk a conception of race held by anthropologists for many years, that is, that "there exist groups of human beings comprised of individuals each of whom possess a certain aggregate of characters which individually and collectively serve to distinguish them from the individuals in all other groups." The author shows that such a concept is genetically impossible.

The biological facts are stated *in extenso* and the social and psychological factors concerned with "race" are examined in detail. These chapters are followed by others which deal with the creative power of "race" mixture, in which the position of Australian-white crosses is examined; eugenics, genetics and "race"; "race" and culture; "race" and war; and "race" and blood. Not the least admirable part of this book is the excellent bibliography which at once proclaims the scholarship of the author and the unusually broad nature of his reading.

F. L. S. BELL.

**Arts of the South Seas.** By Ralph Linton and Paul S. Wingert in collaboration with Rene D'Harnoncourt; colour illustrations by Miguel Covarrubias. Museum of Modern Art, New York, 1946. 200 pp. Five dollars.

The title of this book is not very closely related to its contents. Instead of dealing with the techniques and the products of the innumerable arts and crafts of the South Seas the work consists of a brief and sectionalized account of the natives and their customs, including their social organization, religious beliefs and practices, material culture, and other outstanding traits. The vast region of Oceania with which it is concerned is dealt with under six areas in Polynesia, thirteen areas in Melanesia, and one chapter each on Micronesia and Australia. A valuable bibliography dealing with each of the above sections is given. The volume is illustrated by almost two hundred illustrations and maps, and four coloured plates.

The combination in authorship of ethnologists and artists is an excellent idea and has resulted in some valuable interpretations of Oceanic art, such as, for example, the reference to Sepik River art: "Sepik River art derives its unique character from its remarkable ability to make plastic forms the carrier of strong emotions. It lacks to a great extent the traditional, formal restraints that give uniformity to other regional styles. Based on human and animal shapes that are often distorted or combined to produce grotesque and fantastic effects, this intense, sensual, magic art depends for its plastic impact almost entirely on the bold integration of its design elements. Imagination ordered but not restricted by feeling for form makes the art of the Sepik an ideal instrument for its main purpose—the release of magic power." Such paragraphs are to be found throughout the book.

The volume, of course, is not without its faults. Several items, such as Tami Island house-panels and human figures from the north Bougainville coast are referred to as outstanding in Oceanic art but are not illustrated. One finds, too, that such a remarkable art development as the interior decoration of the men's clubhouses in western Micronesia is not even mentioned. In the Australian chapter, which is very superficial, it is claimed that the returning boomerang is known only along the southern edge of the continent, whereas it was used throughout eastern Australia excepting Cape York and in most parts of Western Australia. Here, too, the highly questionable remark is made that the outline type of rock engraving near Sydney is of comparatively recent date, and that the intagliated type of South Australia is of great age. It can only be pointed out that if the chronology of techniques throughout the world can be applied to Australia then the intagliated type is a later development than the outline type, but the question of how recently each style survived in Australia has yet to be solved.

The illustrations reveal that American museums as a whole possess some very fine examples of Oceanic native art, a point which indicates how important it is for Australian museums to garner the rich treasures of this kind to be had in its external territories of New Guinea and the northern Solomons.

This work was issued in conjunction with an exhibition of the same title conducted by the Museum of Modern Art, and the general reader will find in it much to interest him about South Sea customs, whilst the professional ethnologist will treasure the splendid series of specimens figured.

F. D. MCCARTHY.

### CORRESPONDENCE, NOTES AND NEWS :

#### Back Numbers of "Mankind."

The Council of the Anthropological Society of N.S.W. has had several requests by individuals and public institutions desirous of completing their files of MANKIND for copies of Numbers I (One) and II (Eleven) of Volume I (One) of the journal and Number 9 (Nine) of Volume II (Two) of the journal. Unfortunately, such requests cannot be complied with owing to these particular issues being out of print. An appeal is made to members who have copies of the wanted issues, or indeed who have any copies of Volume I available for distribution, to inform the Honorary Secretary as soon as possible.

Members of the Association, particularly those in Victoria, South Australia, Queensland and Tasmania, are advised that back numbers of the journal, with indexes, are available for sale on application to the Honorary Secretary.

#### Valuable Gift to Library.

The library of the Anthropological Society of N.S.W. was recently enriched by the gift of a set of the now rare early publications of the Bernice Pauahi Bishop Museum. The volumes were the gift of a former Curator of the Museum, Mr. A. Wansey, of Quirindi. It is hoped that Mr. Wansey's generous

action will remind other members that in the Society's library there exists a most suitable depository for any anthropological works.

#### Movements of Members.

Mr. N. Warren Waterhouse, a member of the Council of the Anthropological Society of N.S.W., is at present on a tour of the Pacific, during which he hopes to make useful contacts in New Caledonia, the Society and the Hawaiian Islands. In Honolulu, he intends to convey Council's good wishes to our distinguished honorary member, Sir Peter H. Buck, Director of the B. P. Bishop Museum.

Mr. E. J. Bryce has applied for leave of absence from Council in order to enable him to visit Europe. Whilst overseas, Mr. Bryce will represent the Society at an international congress of the Anthropological Sciences scheduled to be held in Prague early this year.

Dr. A. Capell, the President of the Anthropological Society of N.S.W., is at present in Papua, where he is carrying out a linguistic survey of the Koiari people, under the auspices of the Australian National Research Council. Dr. Capell will be returning to Sydney in March to resume his duties at the University of Sydney.

**Anthropological Society of N.S.W.:  
Financial Position.**

Sir,

I have examined the cash books and vouchers of the Anthropological Society of New South Wales for the period commencing 1st October, 1945, and ending 30th September, 1946, and certify that the following Statement of Income and Expenditure is correctly compiled therefrom.

and that in my opinion the accompanying Statement of Assets and Liabilities fairly sets out the position of the Society at the concluding date.

The valuation of the stock on hand of MANKIND, as vouched for by the Honorary Secretary, has been accepted by me.

E. A. HOLDEN,  
Chartered Accountant (Aust.).

**INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 30TH SEPTEMBER, 1946**

EXPENDITURE.				INCOME.			
	£	s.	d.		£	s.	d.
To Stationery .. .. .	2	11	8	By Subscriptions .. .. .	45	5	6
„ Postages .. .. .	7	4	10	„ Bank Interest .. .. .	1	5	8
„ Roneo Printing .. .. .	0	16	0	„ Sales of Journal MANKIND ..	4	8	11
„ Sundry Expenditure .. ..	0	12	0	„ Donations .. .. .	2	1	0
„ Cost of Printing MANKIND, less Contributions from Victorian and South Australian Societies and Sundry Donations .. .. .	49	14	4	„ Excess of Expenditure over In- come .. .. .	7	17	9
	£60	18	10		£60	18	10

**BALANCE SHEET AS AT 30TH SEPTEMBER, 1946.**

LIABILITIES.				ASSETS.			
	£	s.	d.		£	s.	d.
Society Fund—				Stocks of MANKIND .. .. .	118	10	9
Balance as at 1st October, 1945	222	11	0	Library .. .. .	50	0	0
Add Increase Stocks of MANKIND	10	11	0	Commonwealth Savings Bank ..	40	18	11
	233	2	0	Cash in Hand .. .. .	0	2	7
Less Excess of Expenditure over Income for year ended 30th September, 1946.. .. .	7	17	9	Sundry Debtors—Victorian and South Australian Societies Estimated Contributions to MAN- KIND, No. 9 .. .. .	15	12	0
	£225	4	3		£225	4	3